TERM LIMITS, RESPONSIVENESS AND THE FAILURES OF INCREASED COMPETITION*

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Across the country, support for legislative term limits appears to be widespread and deeply held. To date, voters in 14 states have voted to limit the number of terms that their members of Congress can serve. In addition, voters in four states have passed legislation to limit the terms of their state legislators.

As we write this chapter, the actual effect of legislative term limits is difficult to discern. In 1994, legislative term limits are, for the most part, several years from implementation.[1] Furthermore, the inevitable legal challenges to term limits threaten to postpone the day when we can obtain sufficient empirical evidence about the policy consequences of term limits. Since participants in the current debate about legislative term limits cannot rely on empirical evidence to support their claims, term limits proponents and opponents are compelled to rely on theoretical arguments about the consequence of term limits. In this chapter, we evaluate one such argument.[2]

The argument in question is often offered by term limits proponents and can be summarized as follows: by removing long-term incumbents and increasing electoral competition, legislative term limits lead to more responsive policy outcomes."[3] In its simplest form, the argument consists of three premises and a conclusion. The first premise is that term limits remove long-term incumbents. The second premise is that removing long-term incumbents empowers potential challengers, thereby increasing electoral competition. The third premise is that increasing electoral competition will lead to more responsive policy outcomes. The argument concludes that term limits lead to more responsive policy outcomes.

If we give term limit proponents the benefit of the doubt and assume that their first two premises are correct, must we conclude, as they do that term limits will lead to more responsive policy outcomes?[4] Using a rigorous analysis of the relationship between electoral competition and policy responsiveness, we argue that the proponent's conclusion is difficult to justify. Our argument is based on the finding that an increase in electoral competition is neither a necessary nor a sufficient condition for more responsive policy outcomes. In fact, we even identify plausible conditions under which such an increase actually leads to less responsive policy outcomes. Our findings imply that compelling and logically justifiable claims

about term limits must be based on arguments other than "term limits will increase responsiveness by increasing electoral competition." Our analysis is also suggestive of the characteristics that electoral reforms should possess if they are to increase responsiveness effectively.

The remainder of this chapter proceeds as follows. In the next section, we provide a definition of responsiveness that subsumes many of the definitions currently employed in the term limits debate. Then, we use a theory of political decision making developed in Gerber and Lupia (1993) to evaluate the relationship between competition and responsiveness. We conclude by using the results of our evaluation to construct a deductively valid argument about the policy consequences of term limits.

A DEFINITION OF RESPONSIVENESS

Perhaps the most important consequence of term limits is their effect on the relationship between voter preferences and policy outcomes. The word *responsiveness* is often used to describe this relationship. There exists, however, much disagreement about what *responsiveness* actually means. Since our objective is to conduct a positive analysis of the consequences of term limits, we adopt a definition of responsiveness that subsumes many of the definitions currently offered by term limits scholars, proponents and opponents.

At the foundation of our definition is the assumption, standard to both game theory and social choice theory, that every voter has a well-defined (i.e., complete and transitive) preference ordering over the set of possible policy outcomes. *We say that a policy outcome's responsiveness increases as does its similarity to the outcome that a voter most prefers.*

An important feature of our definition is that cognitive and/or perceptual limitations can render voters uncertain about which policies produce favorable outcomes. In other words, we explicitly recognize that ignorance may lead a voter to express preferences over specific *policies* that are inconsistent with her preference ordering over *policy outcomes*. Therefore, a normative implication of our definition is that a legislator who gives an ignorant voter what she thinks she wants is not necessarily taking actions that lead to outcomes that are more responsive to the voter's preferences over outcomes. Whether such actions are taken out of the legislator's own ignorance, malevolence towards voters, or both, the voter's preferences over *policy outcomes* are not necessarily being served. We prefer our definition because we believe that preferences over outcomes are what many scholars are interested in debating and are what some electoral reformers are interested in servicing.

While we define responsiveness with respect to the preferences of a single individual, the extension of our definition to groups of voters is straightforward. That is, if individual preference orderings over policy outcomes can be aggregated in a manner that allows some well-defined group preference ordering to be expressed, then we can treat responsiveness to a group's well being in much the same way that we treat responsiveness to an individual's well being.[5] Since our definition of responsiveness extends easily to group preferences, it is particularly beneficial for the purposes of positive analysis. The benefit is derived from the fact that our definition does not rely on any particular notion of how individual preferences should be aggregated (e.g, elitism, majoritarianism or egalitarianism). Therefore, our definition allows us to explain how term limits affect the responsiveness of policy outcomes to many normatively appealing notions of the "common good."[6]

ELECTORAL COMPETITION AND RESPONSIVENESS

For increased electoral competition to produce greater responsiveness, it must induce legislators to take actions that lead to more responsive policy outcomes. Among the legislative activities that can produce responsive outcomes are proposing, defending and/or voting for policies that lead to responsive outcomes and conducting oversight of agencies that are charged with administering policies.[7] What conditions determine whether a legislator will be induced to take such actions and how can we determine the extent to which an increase in electoral competition creates these conditions? To answer these questions, we apply a simplified version of a model of policy formation and electoral decision making developed in Gerber and Lupia (1993).[8]

The substantive motivation for this application of our model is the situation faced by an incumbent legislator and a voter (or group of voters whose preferences are well-defined) who can each take an action that can affect the other's well-being.[9] The incumbent legislator must first decide whether or not to engage in an activity that can affect a policy outcome. After the incumbent legislator acts, the voter must decide whether to reward or punish the legislator. We examine the case where the currency of reward and punishment is the voter's ability to affect the incumbent legislator's reelection prospects (e.g., by delivering or withholding a vote or campaign contribution.)

In essence, we model the legislator-voter interaction as a referendum on the incumbent's performance, where the legislator chooses her actions on the basis of the voter's likely behavior and the voter chooses her actions on the basis of the policy outcomes she perceives. We first use this simple model to identify conditions under which the voter can induce the legislator to take actions that lead to more responsive policy outcomes. We then alter the model in several ways to demonstrate important facets of the relationship between increased electoral competition and responsiveness.

A Referendum on the Incumbent's Performance

We initially model the situation just described as a single-shot game between two players called the *incumbent* and the *voter*.

The object of the game is to produce a policy outcome, where policy outcomes are represented as points on the line [0, 1]. One of these policy outcomes is determined exogenous to the play of the game and is called the *status quo*. Also represented as points on this line are players' ideal points. We assume that each player has single-peaked preferences over the set of possible policy outcomes (i.e., players prefer policy outcomes that are as close to their own ideal points as possible). Unless stated otherwise, all aspects of the game are common knowledge.

The sequence of events is as follows. The incumbent moves first by taking an action that either changes or maintains the status quo. Then the voter chooses to either reward or punish the incumbent. While the intuition underlying our results holds any time that the voter has some way to affect the incumbent's well being we examine the case where the voter is decisive.[10] Thus, if the voter rewards the incumbent, then the policy outcome is determined by the incumbent's action. If the voter punishes the incumbent, then the policy outcome reverts to the status quo. After the voter moves, the game ends.

From our assumption about the shape of voter preferences, it follows that the voter's well being is determined by the proximity of the policy outcome to the voter ideal point. We use the term responsiveness, as defined earlier, to refer to the distance between the voter's ideal point and the post-election policy outcome (e.g., outcomes that are closer to the voter ideal point are more responsive). Since the voter in our model is a conceptual proxy for any group of voters for whom a well-defined aggregate preference can be stated, our spatial definition of responsiveness is without a loss of generality to the verbal definition given earlier.[11] The incumbent's well being is determined by both the proximity of the policy outcome to the incumbent's ideal point and whether or not she is punished. We assume that, all else constant, the incumbent prefers not to be punished.

Before we describe behavior and outcomes in the model, it is important to introduce one exception to the common knowledge assumption: the voter may be uncertain about the policy consequences (spatial location) of the incumbent's actions. Given the apparent complexity of modern policy-making, such an assumption is easy to justify. The most relevant implication of this assumption is that the voter may be uncertain about whether rewarding or punishing the incumbent will make her better off.

We find that the outcome of this game depends on the status of the following two conditions:[12]

- The Sympathetic Legislator Condition - The action that has the most favorable consequences for the voter also has the most favorable consequences for the incumbent.

- The Knowledgeable Voter Condition - The voter knows enough about the policy consequences of the incumbent's action to determine whether punishing or rewarding the incumbent is consistent with the voter's best interests. (Notice that a voter who satisfies this condition does not have to be completely informed about the consequences of the incumbent's actions. All that is required is that the voter can distinguish proposals that have more favorable personal consequences than the status quo from proposals that have less favorable consequences.)

When **both** conditions are satisfied, the incumbent, in pursuing her own best interests, does what is best for the voter; the voter is sufficiently knowledgeable to recognize such behavior and the incumbent is sufficiently knowledgeable to anticipate the voter's behavior. In equilibrium, the voter chooses to reward the incumbent and the resulting policy outcome is the voter's ideal point. This policy is maximally responsive.

The outcome may be less responsive when only **one of the two** conditions are satisfied. For instance, when only the Sympathetic Legislator condition obtains, even an incumbent who would otherwise want to take actions that she believes will have beneficial consequences for the voter might be dissuaded from doing so. The incumbent will have such a belief if ignorance about the relationship between incumbent actions and policy outcomes will lead the voter to mistake beneficial actions for detrimental actions (or vice versa) and apply punishment or reward according to these perceptions. If the voter is subject to this type of perception, then the incumbent may not take actions that lead to the voter's ideal point as the policy outcome.

Similarly, when only the Knowledgeable Voter condition holds, the voter knows enough to punish an incumbent who takes an action that leads to an outcome that has less favorable consequences than the status quo. However, without any further power to reward or punish the legislator, the voter cannot induce legislator sympathy. That is, the voter can prevent the incumbent from taking actions that have consequences that are worse for the voter than the status quo but cannot induce the incumbent to take actions that lead to the voter's ideal point as the policy outcome.

By contrast, the outcome can be quite unresponsive when **neither** condition is satisfied. This follows for two reasons. First, if the incumbent and voter have conflicting policy desires, then the incumbent may have an incentive to take actions that produce bad outcomes for the voter.[13] Second, the voter's ignorance may lead her to either reward incumbents who take actions that (unbeknownst to her) produce detrimental outcomes or punish incumbents whose actions are beneficial.

A comparison of these three types of outcomes suggests that if an electoral reform is to lead to an increase in responsiveness, it must either induce legislator sympathy, increase voter knowledge or both. We now show the extent to which an increase in competition has these effects and, hence, the extent to which an increase in competition increases responsiveness.

The Effects of Increased and Credible Competition

To isolate the effects of electoral competition on responsiveness, we re-analyze the model after adding a third player called the *challenger*. The challenger moves after the incumbent, but before the voter. For maximal simplicity, we present the challenger as a player who must decide whether or not to provide the voter with a particular piece of information that will lead the voter to punish the incumbent. So, for example, the challenger can be thought of as a player who has to decide whether or not to make a statement like: "You, the voter, should punish the incumbent because the spatial location of the policy outcome that will result from the incumbent's actions is farther from your ideal point than is the status quo." We examine the case where it is common knowledge that the challenger prefers the status quo over the policy outcome that would result if the incumbent were reelected (i.e., the challenger is anti-incumbent). For the moment, we assume that the voter perceives the challenger's statement as credible.[14] We also assume that it is costly for the challenger to make this statement, though for simplicity, we assume that this cost is common knowledge.[15]

The relationship between competition and responsiveness within the model can now be stated. We call the case where there is no challenger *non-competitive* and the case where there is a challenger *competitive*. The effects of *an increase in electoral competition* are identified by comparing the non-competitive and competitive cases.[16] If adding the challenger produces a policy outcome that is closer to the voter's ideal point, then we say that competition increases responsiveness. If adding the challenger has no effect on the policy outcome, then we say that competition does not affect responsiveness. If adding the challenger produces a policy outcome that is farther from the voter's ideal point, then we say that competition decreases responsiveness.

An analysis of our revised model shows that there are two distinct ways in which an increase in competition can affect responsiveness. The first effect can be described as follows: if, as a result of any new policy proposal, the incumbent expects to face a challenger who can convince the voter to punish the incumbent for changing the status quo, and if the incumbent dislikes being punished, then an increase in competition will be sufficient to induce the incumbent to maintain the status quo. If the challenger is credible, this inducement leads to either no change in responsiveness or an increase in responsiveness. This effect leads to an increase in responsiveness if (1) absent competition, the voter believes that the policy outcome resulting from the incumbent's action is likely to be closer to her own ideal point than the status quo and (2) in reality, her beliefs is incorrect (e.g., the incumbent and voter ideal points are on opposite sides of the status quo). In this case, the presence of a challenger who can affect the voter's beliefs and behavior dissuades the incumbent from taking an action that leads to an outcome that is worse for the voter than the status quo. In all other cases, this effect of increased competition does not affect responsiveness.

The intuition underlying credible competition's second effect can be explained in two steps. First, in the absence of a challenger and in the presence of an incompletely informed voter (i.e., a voter who is uncertain about the policy consequences of the incumbent's actions), the incumbent considers only her own policy preferences when choosing her actions.[17] In fact, we expect such an incumbent to choose the policy that leads to her own ideal point as the outcome, regardless of how such an action affects voter welfare. Second, if the incumbent believes that the challenger's decision to wage a campaign against her depends on the particular policy-related action that she takes, then the incumbent can be induced to consider another player's preferences when choosing her actions. To support this insight, consider the following example:

> Suppose the incumbent knows that it will cost the challenger some large (exogenously determined) amount to get the voter's attention and make the persuasive statement "punish the incumbent." The incumbent may then have an incentive to take an action that leads to an outcome that is more like the challenger's ideal point and less like her own ideal point. If the outcome is close enough to the challenger's ideal point, then the challenger will no longer be able to justify the cost of campaigning against the incumbent. The incumbent has such an incentive if: the challenger can affect the voter's strategy; the policy outcome that results from the change in incumbent behavior is sufficient to dissuade the challenger from waging a campaign; and that policy outcome still leaves the incumbent better off than maintaining the status quo.

This second effect increases responsiveness if (1) the voter's beliefs are such that she will reward the incumbent unless the challenger tells her otherwise and (2) the voter's ideal point is closer to the status quo than it is to the incumbent's ideal point. In these cases, the incumbent chooses a policy outcome that is closer to the voter's ideal point than she would have chosen in the absence of competition and the result is an increase in responsiveness. Otherwise, this effect does not affect responsiveness.

Notice that the key dynamic in each case is what the incumbent "sees" when she looks forward in time. With the credible challenger described at the beginning of this subsection, the incumbent sees that her present actions can be used by the challenger to turn the voter against her. Absent the challenger, the incumbent would not have to consider such a sequence of events. In sum, if incumbent and voter preferences over policy outcomes are sufficiently adversarial, an increase in credible competition makes the voter more knowledgeable about the consequences of the incumbent's action and induces the incumbent to be more sympathetic.[18]

The Effects of Increased and Non-Credible Competition

Since there is nothing about term limits that ensure or even increase the likelihood of credible challengers, it is important to analyze the relationship between competition and responsiveness under more robust, and reasonable, assumptions about challenger credibility. In this spirit, we reanalyze the previous model after introducing a second exception to the common knowledge assumption: the voter has beliefs about, but cannot verify, the veracity of the challenger's campaign statement. What voters learn from campaign statements in this case will depend on their perception of the challenger's credibility.

In some models of political and economic interaction, the determinants of a statement's credibility are derived as part of the game's equilibrium conditions.[19] Factors that have been found to influence a statement's credibility include having a reputation for holding certain types of issue positions (i.e., a perceived proximity of interests between a statement maker and the person for whom the statement was intended), and the existence of commonly known penalties for lying (i.e., formal or informal sanctions on verified liars such as the possibility damage to an otherwise valuable reputation for honesty). An equivalent derivation of credibility conditions is outside the scope of this paper. However, for illustrative purposes we discuss the effects of increased competition using two cases that have ample substantive motivation: the case where the challenger is unable to persuade the voter to punish the incumbent when it would be in the voter's interest to do so, and the case where the challenger has the ability to mislead the voter.

When the challenger cannot persuade. In this case, we assume that it is common knowledge that the challenger lacks the characteristics that would otherwise allow it to influence voter opinion. Thus, when this challenger says "punish the incumbent," it is as though the voter cannot hear her. The substantive motivation for this assumption are challengers whose backgrounds and preferences are not well known to voters.

The outcome of the incumbent-voter game in this case is exactly the same as the outcome of the game with no challenger. That is, the addition of a challenger who cannot affect voter opinion is equivalent to no challenger. To the extent that an increase in electoral competition introduces challengers who have difficulty moving voter opinion, it will be neither a necessary nor a sufficient condition for more responsive policy outcomes.

When the challenger can mislead. If all claims made during the course of a campaign are known to be truthful and if all potential challengers are able to make informative campaign statements, then an increase in electoral competition necessarily increases voter knowledgeability and, as a result, responsiveness. To assume that all campaign claims are truthful, however, seems quite unreasonable. In this final section of analysis, we show that the possibility of a challenger who can mislead the voter complicates the relationship between increased competition and responsiveness.[20] We even identify conditions under which increasing competition leads to a decrease in responsiveness.

To understand how the presence of a challenger who can mislead the voter affects the incumbent-voter interaction, we must know something about the conditions under which the voter can be mislead. To simplify the statement of these conditions, we begin with the premise that if a statement is not true, it is a lie. We then assert that there are two necessary conditions for lying: a person must have both an opportunity and a motive to lie. We further assert that the opportunity to lie is ubiquitous in the act of political campaigning and that the motive for the challenger to mislead the voter can be quite high. (For example, a challenger may be tempted to lie if lying is the only way that she can defeat the incumbent.) It follows that a necessary condition for the challenger to mislead the voter is that the voter be uncertain about the veracity of the challenger's statement. Since the opportunity to lie is ubiquitous in the act of political campaigning, it also follows that a voter will be uncertain about the veracity of the challenger's statement only if the voter is either uncertain about the challenger's motives or knows that the challenger has a motive to mislead. Since this necessary condition is often satisfied, we conclude that one cannot understand the consequences of increased competition or term limits without considering their effect under differing assumptions about candidate credibility.

We now reexamine the competitive model after changing only two assumptions. First, we assume that the challenger can make an untruthful statement. Second, we assume that the voter has no reliable way to verify the veracity of the challenger's statement. In this case, we assume that the voter believes that the challenger has at least some of the characteristics that contribute to credibility (i.e., perhaps she believes that she and the challenger have very similar preferences over outcomes).[21] The substantive motivation for this particular case is a challenger who cannot be held accountable for some of her claims.

To see that a challenger who can mislead voters may lead to a decrease in responsiveness, it is sufficient to reconsider the second effect of competition found in the credible challenger case:

> . . . if the incumbent believes that the challenger's decision to wage a campaign against her depends on the particular policy-related action that she takes, then the incumbent can be induced to consider another player's preferences when choosing her actions.

This effect of increased competition induces the incumbent to be more responsive to the challenger's preferences. In our analysis of the effect of an increase in credible competition, the fact that the challenger could not mislead the voter, implied that this effect never decreased responsiveness. The same is not true when the challenger can mislead. That is, if voter and challenger preferences are sufficiently

different (i.e., policy outcomes that are closer to the challenger's ideal point are farther from the voter's ideal point), and if the voter believes otherwise, then the challenger can persuade the voter to punish (reward) an incumbent that the voter would reward (punish) if she were better informed. This situation is most likely when the voter believes that the challenger's ideal point is closer to her own than the incumbent's ideal point even though the opposite relationship is actually the case. In this case, an incumbent who dislikes being punished chooses a policy that results in a more favorable outcome for the challenger, the challenger persuades the voter to reward the incumbent, but because voter and challenger preferences over outcomes are actually quite distinct, the outcome is less responsive with respect to the voter's preferences. In sum, if the challenger can both affect the incumbent's well-being and mislead the voter, then an increase in electoral competition can lead policy outcomes that are less responsive to voter preferences.

SUMMARY

To see how our analysis helps us understand the policy consequences of term limits, recall the proponent argument described in the introductory section of this chapter. From that argument's first two premises, we can conclude that term limits will increase electoral competition. The third premise is that increasing electoral competition leads to more responsive policy outcomes.

Our primary finding is that this final premise is difficult to justify. That is, if a potential challenger is not sufficiently credible to influence voter behavior, then increasing competition by adding (empowering) this challenger cannot affect the incumbent's incentives and, as a result, will not affect responsiveness. Furthermore, if the challenger can make statements that influence voter behavior, then the incumbent may have more of an incentive to be responsive to the challenger's preferences than she does to be responsive to voter preferences. If challenger and voter preferences are sufficiently distinct, then an increase in competition can actually lead to less responsive outcomes.

In sum, compelling arguments about the consequences of term limits should not rely on the premise that increasing electoral competition necessarily leads to more responsive policy outcomes. An increase in competition is neither a necessary nor a sufficient condition for greater responsiveness. Consequently, those whose support for term limits is founded on the increased competition theory that we have evaluated must either find another theory to support their position or find an electoral reform that actually increases voter knowledge, legislator sympathy or both.

Endnotes

1. Legislative term limits have been in place in many local jurisdictions; however, institutional differences complicate comparisons between their effects on local government and their likely effects on state and federal government.

2. Another argument about the consequences of term limits has been evaluated by Cohen and Spitzer (1992). Cohen and Spitzer evaluate the relationship between legislator behavior and the fact a legislator knows the date at which he or she will no longer be able to hold a term-limited office. Their primary conclusions are that term limits decrease a legislator's willingness to engage in activities that provide long-term benefits to constituents and that knowing the precise date of their last day in office may also make legislators less responsive to their constituent's interests. Their argument is sufficiently careful that it is impossible to refute on the grounds of logical consistency. However, term limits supporters could nevertheless argue that other normative gains from term limits outweigh the costs imposed by the potentially perverse incentives generated by the "last term" problems that Cohen and Spitzer identify. In this paper, we apply a model of electoral and legislative decision making under uncertainty to show that, even if the "last term" problems are normatively irrelevant, the possible policy consequences of term limits render them difficult to support as a way of improving voter welfare.

3. Petracca (1991a, b) uses this type of argument to conclude that term limits will produce legislators who are more responsive to their constituents' preferences. Similarly, Will (1992) uses this type of argument to conclude that term limits will make legislators more responsive to (a paternalistic notion of) the public interest.

4. The first premise is easy to defend, since term limits remove long-term incumbents by definition. The second premise is also easy to defend. Any time that some incumbents are declared ineligible for reelection, the number of open-seat races should increase. From Jacobson (1990a,b) and others, we know that open-seat races tend to be more competitive than races that include an incumbent. Therefore, removing incumbents should increase electoral competition. Furthermore, if long-term incumbents are able to deter strong challengers by collecting huge campaign "war chests," as Jacobson (1990a,b), Banks and Kiewiet (1989) and Epstein and Zemsky (1993) suggest, then restricting the actions of such incumbents can only strengthen the challenge that incumbents are likely to face.

5. While social choice theory shows that such aggregations are possible, it also reveals that a normative justification is a prerequisite for arguing that any particular aggregation is more representative of a group's preferences than some other aggregation. See Sen (1970) for an accessible and thorough review of the seminal social choice literature.

6. Our definition also implies that the findings from our positive analysis should be applied with care. That is, if the reader has a particular, normatively justifiable notion of responsiveness in mind, and applies our positive results about

the conditions under which term limits can affect responsiveness, they should keep in mind that our positive results combined with a different normative concept can be used to draw the opposite normative inferences. For example, some proponents of term limits believe that there is currently too much legislative emphasis on "responsiveness." That is, proponents such as Will (1992) believe that legislators too often sacrifice the public good in order to respond to a constituent's narrow interests. These proponents support term limits because they believe that term limits will lead to increased responsiveness to their own conception of the "public good." Since even this argument depends on responsiveness, as we have defined it, to a particular aggregation of individual preferences, our evaluation applies to it as well.

7. Theories that are suggestive of non-electoral means of increasing responsiveness include Shepsle and Weingast (1981) and McCubbins, Noll and Weingast (1987).

8. We have attempted to present our model and results at an intuitive and non-technical level. We encourage readers who desire either greater substantive detail or theoretical rigor to examine our previous work.

9. The original substantive motivation for this model was a direct legislation election.

10. The decisive voter assumption simplifies the exposition considerably and makes it easier to compare our model with other spatial election models.

11. An implication of our definition is, of course, that increased responsiveness to this voter's preferences may imply decreased responsiveness to the preferences of some other voter (who is exogenous to this model). Whether the preferences of the voter in our model or the preferences of the exogenous voter should be given more weight in determining the benefit of electoral reform is a question that can be answered only after a normative standard for judging conflict has been imposed.

12. We use the Bayes-Nash equilibrium concept to derive predictions about behavior and outcomes. A Bayes-Nash equilibrium for this game is a set of strategies and consistent beliefs such that each player chooses a best response to the strategy that they believe the other player will choose.

13. For example, incumbents may be responding to interest group or party leadership pressures, or other subsets of the electorate. See Lowi (1979) and Cox and McCubbins (1993) for contrasting perspectives on this matter.

14. Other ways of stating this assumption include "it is common knowledge that the statement is true when it is made" and "the challenger is restricted to the issuance of truthful statements."

15. While it may seem odd to think of paying to speak, realize that there are always positive opportunity costs involved in the act of communication. At a minimum, there is always something else that could have been said. More commonly, making effective campaign statements often requires obtaining voter attention which, in terms of opportunity costs, can be quite costly.

16. Since the challenger is more likely to find waging a campaign profitable when the costs of doing so are low, and *ceteris paribus*, it follows straightforwardly that any electoral reform that effectively lowers a challenger's costs will increase the likelihood that the election is competitive.

17. See Lupia (1992) and Gerber and Lupia (1993).

18. It follows that the stronger the credible challenge, the more responsive the incumbent must be. That is, if, instead of merely providing information, the challenger can provide her own alternative to the status quo, then in the case where the voter and incumbent are adversaries increased credible competition can induce even greater responsiveness. This type of insight in further explored in Gerber and Lupia (1993).

19. See Spence (1973); Crawford and Sobel (1982); Gilligan and Krehbiel (1987, 1989); Grofman and Norrander (1990); Krehbiel (1991); Lupia (1992); Austen-Smith (1993) and Lupia and McCubbins (1994) for examples.

20. For simplicity, we examine the case where the challenger's intent is to mislead the voter. The intuition we describe also applies to the case where the challenger unintentionally misleads the voter. An elaboration of this intuition is offered in Lupia and McCubbins (1994).

21. Otherwise, we would describe the outcome of this game in the case where the challenger cannot persuade.